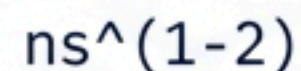


s-Block: Reactive Metals

Connecting valence electron configurations to
macro-level chemical reactivity.

Group 1: Alkali Metals

Group 2: Alkaline Earth Metals



Group 1: Alkali Metals



Li (Lithium): [He] $2s^1$

Na (Sodium): [Ne] $3s^1$

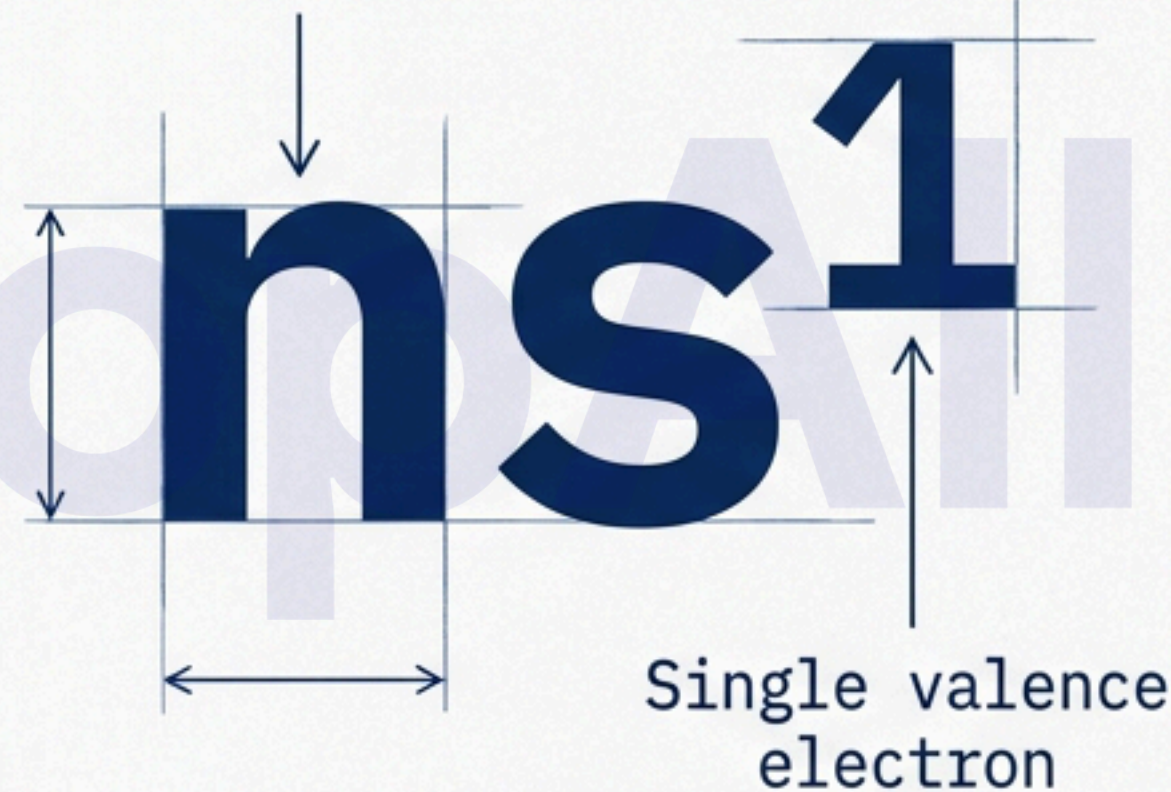
K (Potassium): [Ar] $4s^1$

Rb (Rubidium): [Kr] $5s^1$

Cs (Caesium): [Xe] $6s^1$

Fr (Francium): [Rn] $7s^1$

Principal quantum
number / Period



Chemical Exception: Lithium compounds show pronounced covalent character; others are ionic.

Group 2: Alkaline Earth Metals



Be (Beryllium): [He] $2s^2$

Mg (Magnesium): [Ne] $3s^2$

Ca (Calcium): [Ar] $4s^2$

Sr (Strontium): [Kr] $5s^2$

Ba (Barium): [Xe] $6s^2$

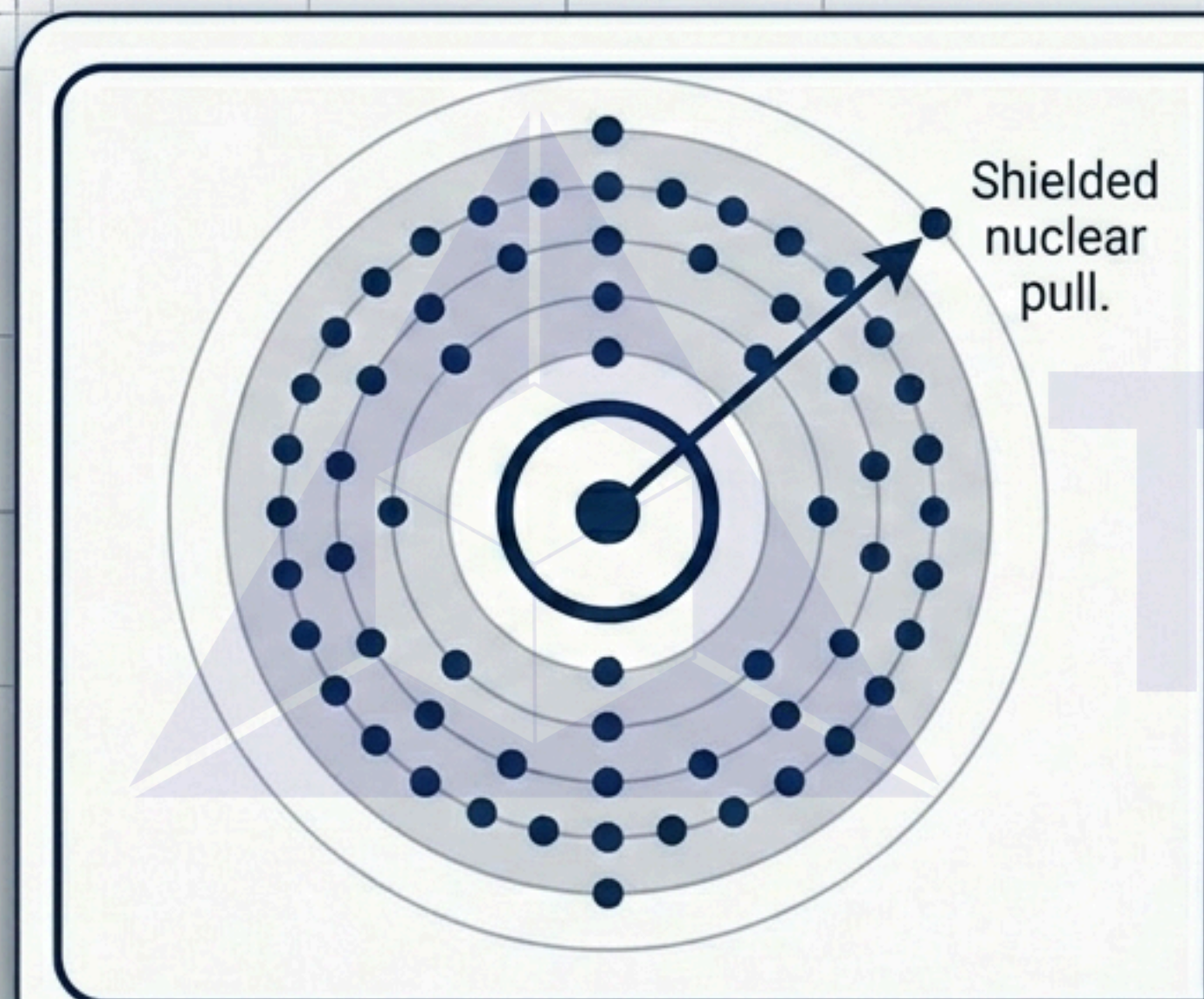
Ra (Radium): [Rn] $7s^2$

ns²

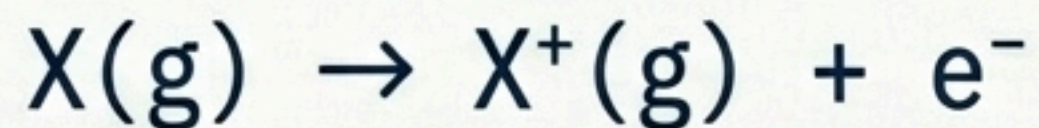
Two valence
electrons in the
outermost s-orbital

Chemical Exception: Beryllium compounds are predominantly covalent; others are ionic.

The Core Driver: Low Ionization Enthalpy



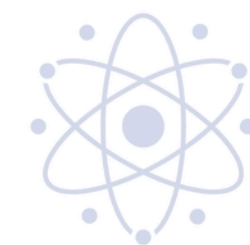
- Inner electron shells effectively shield the outer s-electrons from the positive nucleus.
- Combined with large atomic radii, the net positive charge experienced by valence electrons is low.
- Result: Minimal energy is required to remove the outermost electron(s).





**You've Learned the Theory.
Let's Test Them Now.**

$$E=mc^2$$



Turn theory into marks with **unlimited MCQs, smart analysis, and focused revision.**

Practice Now



At prep.topall.app

Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter



Chemical Action: Ion Formation



Alkali Metals: 1+ Cations



Readily lose their single ns^1 electron to achieve a stable noble gas configuration.

Alkaline Earth Metals: 2+ Cations



Lose both ns^2 electrons. Higher ionization energy than Group 1, but still highly reactive.

Resulting compounds are predominantly ionic matrices (crystalline solids).

The Periodic Trend: Reactivity Increases Downward



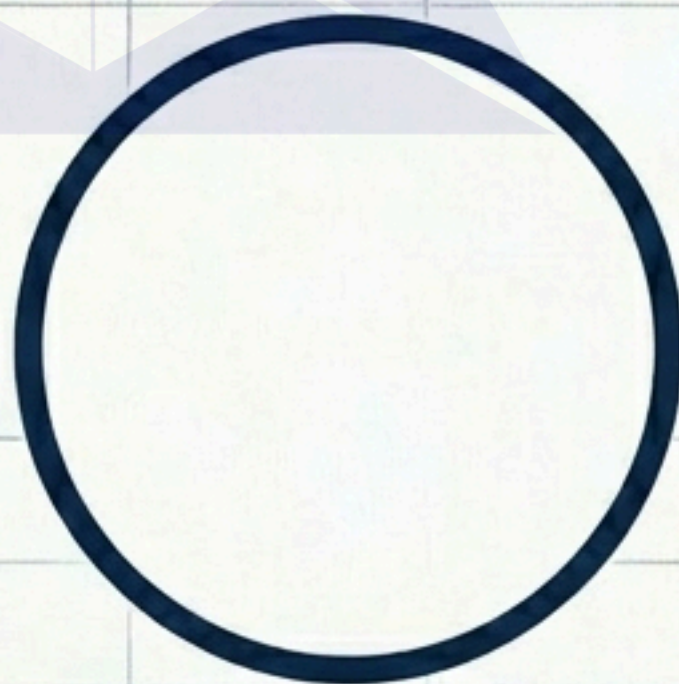
**METALLIC CHARACTER &
REACTIVITY INCREASES**



Smallest atomic radius,
highest ionization enthalpy.



Added principal quantum levels (n) push
valence electrons further from the nucleus.



Largest atomic radius, lowest
ionization enthalpy.



Extreme Reactivity: Because these
metals so readily lose electrons, they
are never found pure in nature.

Key Takeaways: The s-Block Blueprint



Group 1: Alkali	Group 2: Alkaline Earth
ns^1	ns^2
+1 Cations	+2 Cations
Highest reactivity, increases down group	High reactivity, increases down group

The chemistry of the s-block is entirely dictated by the drive to lose their 1 or 2 outermost s-electrons, resulting in highly reactive metals that form predominantly ionic compounds.



You've Learned the Theory.

Now Let's Test It.

Reading notes gets you knowledge.

Practicing MCQs gets you marks.

That's exactly what TopAll Pro is built for.

Try TopAll Pro Now

What TopAll Pro Does Differently

-  **Stuck? Snap it. Solve it. — Doubts AI**
Photo → step-by-step solution in seconds, 24/7
-  **Your AI Coach finds your blind spots**
Concept-level weakness detection — not just chapter-level
-  **4.5 Lakh+ questions. Never run out.**
13× more content than any other prep app in India
-  **Build your own test in 60 seconds**
Pick a chapter, set difficulty — AI does the rest instantly.
-  **AI Recommendation that helps you improve**
AI Recommendation Analysis your Tests and tell you where you need to improve.



Practice the moment you finish studying
Jump in while the concept is still fresh in your head

4.5L+
MCQs

1.5L+
Students

AI Powered
In-Depth Analysis